

OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE

AGRICULTURAL EXPERIMENT STATION

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- 12 Test of Varieties of Wheat.
- 13 Wheat Feeding.
- 30 Oklahoma Weather and Crops for 1897.
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- 36 Summary of Experiments With Corn and Wheat.
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Twenty-Seventh Annual Report of the Experiment Station, June, 1918.

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POWER

FRED R. LOW, *Editor*

A. D.

FRANKLIN VAN WINKLE

F. A. ANNETT

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Cahokia Station
Company, S

THE SECOND L
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operating econo
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Buying Equip

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New Boiler—Ju
Slide Valve for
Oils—Laying u
Transformers o
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Lubrication of
BY ALLEN F. F

Explosion of S
Modern Large

What Is an Ea
BY WILLIAM V

Indexing and

Relative Cost S

High-Pressur
Berg

ments with the Ad Editor

to buy

seely? safely? economically?

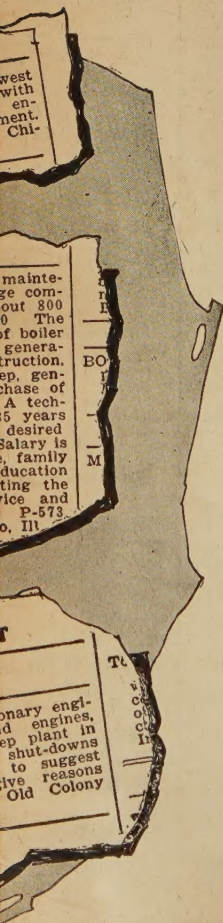
The engineers called for by these advertisements must be able to buy with intelligence—

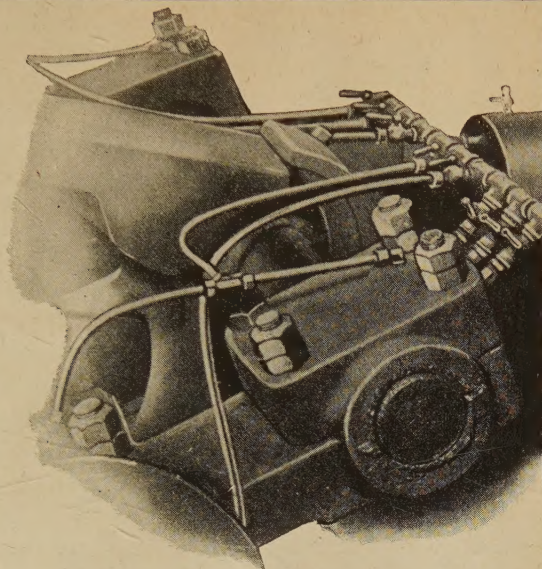
“ . . . to take entire charge of mechanical department.”

“ . . . miscellaneous building construction, machinery installation and upkeep, purchase of fuel and engineering materials. . . .”

“ . . . no shut-downs tolerated. Should be able to suggest economical devices, and give reasons therefore.”

The positions worth fighting for, those that carry responsibility, are open to up-to-date men—men who can improve their plants and get better results. Getting better results demands a thorough knowledge of equipment, based on experience and study. It demands the ability to recognize economies in new developments and to adapt these new developments to the special requirements. In short, it means knowing current equipment thoroughly—knowing what to buy, when to buy,





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Poor L
Loss of
Fire H
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Note collar of
at bearing's e

Dirt—friction

FRICITION hasn't a ghost of a chance with cant correctly applied, but when dirt, grit, sides then there's a different story.

For with dirt inside a bearing, an abrasive transforming the flying shaft into a miniature g Friction results. There is a power loss. Wear when wear starts costly trouble is inevitable.

Overcome this menace—you can. By forcing to the bearings under the high pressure obtain Keystone Manifold Safety Lubricator a collar formed at the bearing's end. This practically s ance between bearing and shaft. Dirt cannot

The Keystone Manifold Lubricator presents applying Keystone Grease under high pressure one bearing. Grease is fed positively — efficient waste—thru pipe line leads directly to the bearing details. Write!



Kingsway, one of the leading thoroughfares of London's West End, looking towards Aldwych.

Aldwych House—London

LONDON City is overcrowding. According to the London *"Evening News"*, many business firms are deserting their offices in the heart of the city for the spaciousness and light of the West End. They are moving West for the sake of more daylight, fresh air, and a place to park a car.

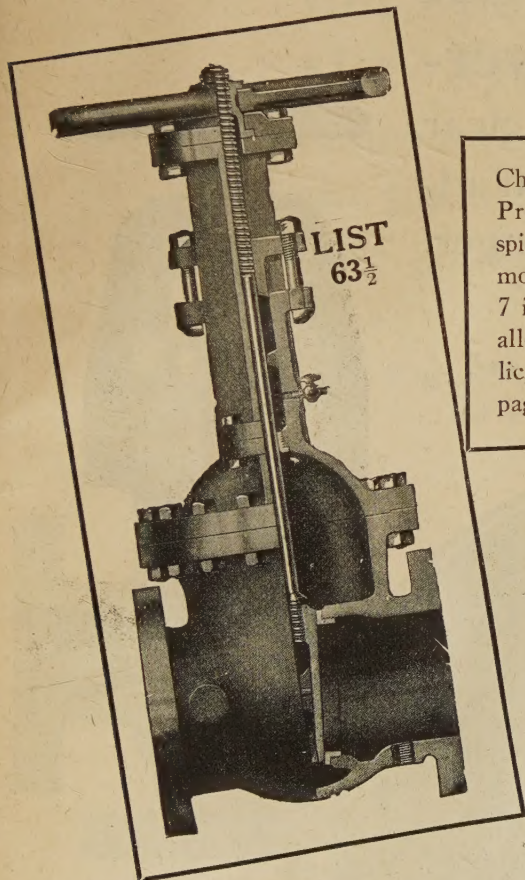
Aldwych House is one of the new great office buildings in London's West End. It is said to have the largest unobstructed floor space of any building in London—nearly half an acre a floor. It is a modern business palace.

And Aldwych House, like hun-

Jenkins Valves are known for their well proportioned design and construction, and fitness for the service for which they are recommended. Every part of the valve is built heavy and strong — nothing is skimped. This superior design and workmanship is recognized by valve users everywhere—and is of inestimable importance where continuity of service is indispensable.

Jenkins Valves are supplied for practically all requirements. At mill and engineers' supply houses everywhere.

CHAPMAN



Chapman Cast Steel Gate Valve, W Pressure Superheated Steam Bodies spindles of rolled monel, spindle seats monel. Valves to 6 in. inclusive have 7 in. and up, cast steel plugs, monel allow radiation and lengthen life of public, electric operation. Backed by 5 pages 125-127, Catalog 38.

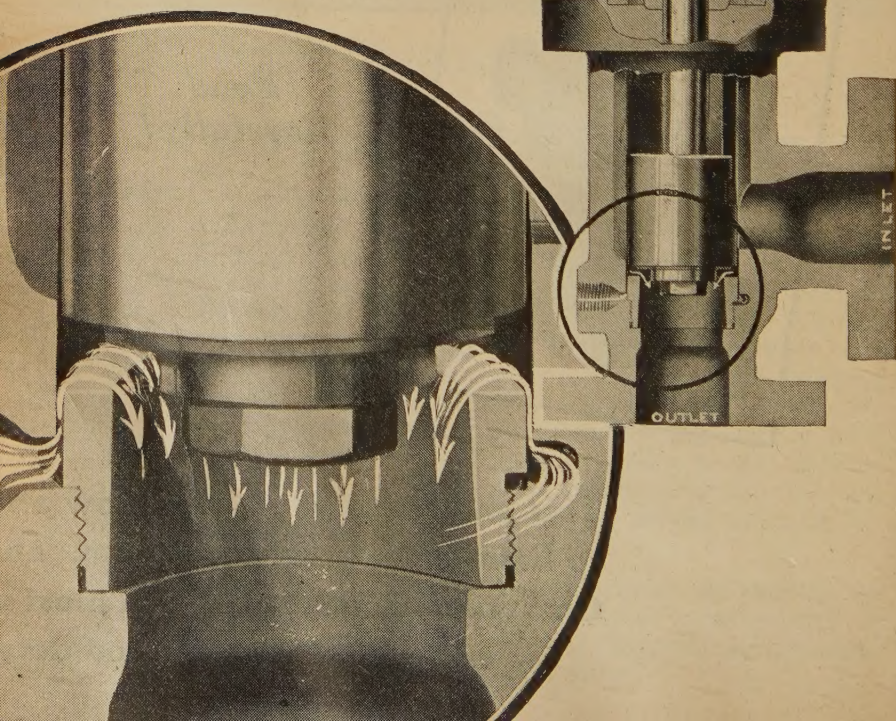
*Read
Carefully!*

This shows all you need know about to handle superheated steam. The Chapman Electric Steel is a most in one—shall we send you deta

EL
Ela
Elong
Reduc
Reduct

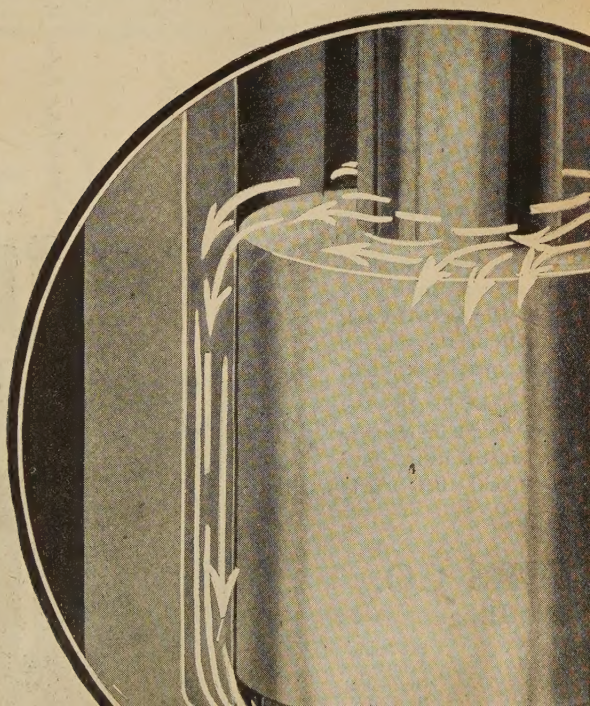
goes the plunger
 an absolutely clean
Absolutely clean—
 in this FABER
 ff Valve a power-
 et sweeps the seat clear
 ment or scale, just in ad-
 ne descending plunger.
 it's tight.

, scoring or wire drawing in
 FABER Blow-Off Valve



Up goes the plunger,
the way. No sediment
can stop it short of
full opening. Because
the **FABER** Blow-
Off Valve a rush of water sweeps
the top of the plunger, as it
The picture shows how simple
it is.

*You always get 100% full opening
the FABER Blow-Off Valve*



Boilers

less?

R. B.
you

t with a few boilers,
s, which are gradually
Republic R. B. Boiler
arger and more elabo-

and of the finest me-
are sold at a price
allest boiler.

ture, protecting the meter
den surges of pressure, is
equipment with this meter.

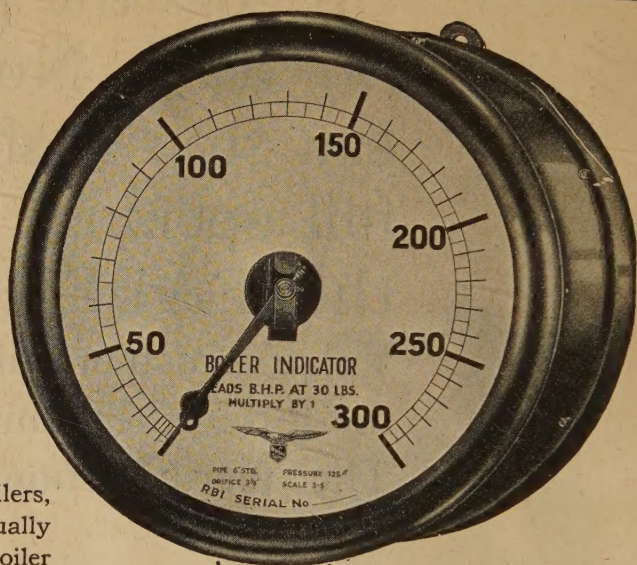
service follows up each
n. Republic experts sta-
oughout the country make
to call on each Republic-
plant several times each
spite of the fact that this
is built as rugged and
it can possibly be built.

y you to ask for the Re-
letins — explaining why
ublic installation pays
quickly and then starts
1.

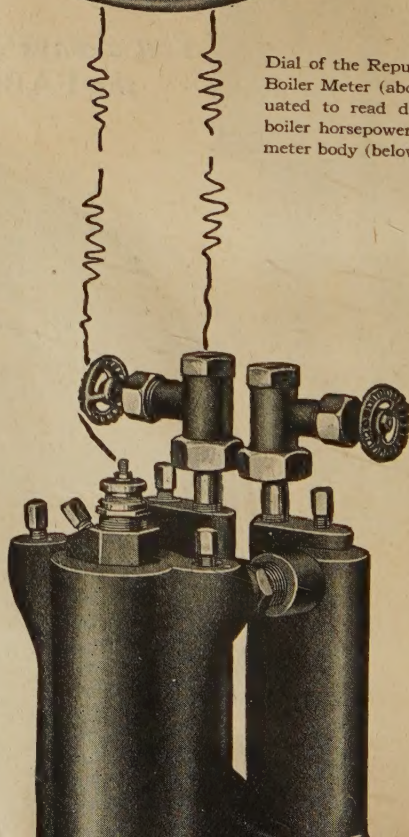
TERS CO.
icago, Ill.

City
eles
ncisco
kee

St. Paul
Seattle
Cincinnati
St. Louis



Dial of the Republic R. B. Boiler Meter (above) graduated to read directly in boiler horsepower, and the meter body (below).



April 1, 1924

Buying—POWER—Section

Another
(



for Devon

New 75,000 k.w. plant of the
Connecticut Light & Power Co.



Installed on three 16,800 sq.ft. Springfield boilers, COPES will maintain a safe and efficient water level at all times.

COPES Regulators feed water to the boilers continuously, at a rate which always meets the exact requirements of the load. Being fed uniformly for uniform load conditions, the battery of boilers pulls together with a unity that is not possible with any other method

V
N
r

Taylor Stoker

*The Pioneer Underfeed Stoker
—and still leading—*

Representative Purchasers Taylor Stokers in 1923

partial list which contains but a few of Central
Industrial Plants that Purchased Taylor Stokers during

It is practically a roster of the largest power plants

responsible for the selection of the stokers for these plants
best engineers and business men in the country.

have chosen the Taylor Stoker for their boiler rooms
as a combustion system.

base their choice, not alone on comparative study
plans but on first hand knowledge, for in nearly every
installations are repeat orders.

ating Co.	General Tire & Rubber Co., Akron, Ohio.
Co.,	Timken Roller Bearing Co., Canton, Ohio.
ansit Co.,	Dayton Power & Light Co., Dayton, Ohio.
& Power Co.,	Columbus Railway, Power & Light Co., Columbus, Ohio.
ew York Co.,	Perdue University, La Fayette, Ind.
c Co.,	Utilities Power & Light Co., Edwardsport, Ind.
o.,	Continental Motors Corp., Muskegon, Mich.
any,	University of Michigan, Ann Arbor, Mich.
ity,	Fisher Body Corp., Detroit, Mich.
any	Pontiac, Mich.
ia.	Detroit Edison Co., Congress Street Station, Detroit, Mich.
, Ga.	Fort Dodge Gas & Electric Co., Fort Dodge, Ia.



Truth in Advertising

—is one of the ideals
subscribed to by this
organization in becom-
ing a member of the
Stoker Manufacturers'
Association—an associ-
ation fostering engi-
neering research that
will further scientific
combustion and educate
the industrial world to
its possibilities.

BURN

there are substantial reasons back of the Universal

**Paid \$500.00
extra
to obtain their
Tracy Purifiers
14 days sooner**



Just recently one of our customers on a rep-
mately \$500.00 additional to have the Tracy
merely to get them installed 14 days earlier
been able to with freight shipment. It seem
nevertheless a fact that just ten days after
stalled—a certain condition arose which wo
turbines if these boilers had not been Tracy

Over 4000 boilers are to-day enjoying the
and savings of absolutely clean, dry steam

ESCO



Devon—

hand in hand. The six Westinghouse stoker fired, 1680 hp. Springfield of the Connecticut Light and Power Company are equipped with will be operated to carry 200 deg. F. for the present and will eventually

completion by the U.G.I. Contracting Co., Engineers and Contractors, of Detroit is the consulting engineer.



GOLDEN-ANDERSON
Pat. Automatic Cushioned
Steam Pressure Reducing
Valves

1. Maintain a constant reduced pressure.
2. Thoroughly cushioned.
3. No hammering, chattering or sticking.
4. No auxiliary valves or small by-passes to clog up.
5. No wire drawing.
6. Only one adjustment from the outside.
7. Double extra heavy throughout—practically indestructible.



GOLDEN-ANDERSON
Pat. Automatic Cushioned
Water Pressure Regulating
Valves

1. Maintain a constant reduced pressure regardless of fluctuations on high pressure side.
2. Perfectly Cushioned by water and air. No metal-to-metal seats.
3. The best valve made for maintaining a constant low pressure where consumption is continuous.
4. Operates quickly or slowly as required—No attention necessary.
5. Positively no hammering or sticking. Sizes to 24 in.

Only the Best Could Meet the Demand

Safety and uninterrupted operation are vital to the steel industry. Consequently unusual care is taken in the selection of the safety devices employed in the plants.

The Big Steel Companies Sent Repeat Orders
for

“4400”

GOLDEN-ANDERSON
Patent Automatic Double Cushioned
Triple Acting and Non-Return Valves

“Heaviest Valves Made”



No better proof of satisfactory performance and confidence by experienced engineers could be asked.

These valves are standardized because they will—

Automatically cut out a damaged boiler.
Shut off steam from every boiler if steam pipe ruptures.

Prevent live steam from entering dead boiler.

Can be tested in service from floor.

Was Selected

The following statement is quoted from a paper presented at the Metropolitan Section of the A.S.M.E. meeting in New York, November 20, 1923. It was made in answer to a question as to what particular or outstanding reasons influenced the engineers and executives in recommending the adoption of PULVERIZED FUEL.

"On the operating basis, there would be a saving of approximately 5% in efficiency in favor of pulverized fuel for continuous operation. This would result in a saving of approximately 6000 tons per year of pulverizing coal at 25c. per ton, or \$50,000 per year at 40% load factor. The saving of pulverizing coal at 25c. per ton, would result in a saving of \$40,000 per year.

I believe these figures are conservative and justify the installation of pulverized fuel as compared with stokers.

In addition to the savings, there are the advantages of cleanliness of operation, ease of control, and the possibility of using lower grade fuels, such as lignite, at a better advantage than we could on stokers.

AMERICAN LIGHT & TRACTOR CO.
W. C. BECKJORD, *Engineer*

Where investigation is the rule
LOPULCO Wins

ENGINEERING CORPORATION

Engineering Corporation

ENHEIMER

"Renewo" and "Ferrenowo" Valves

with renewable
Nickel
Disc and Seat

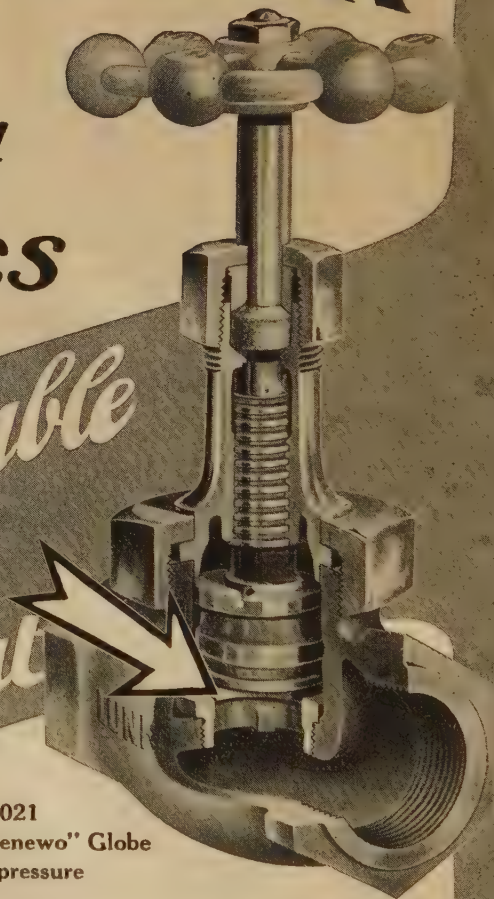
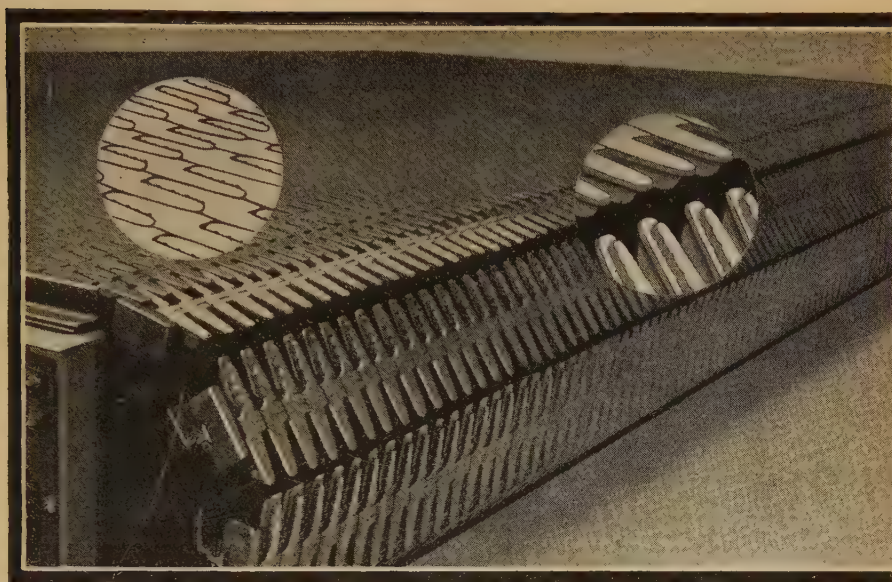


Fig. 1021
Iron Body "Ferrenowo" Globe
150 lbs. pressure

The Bronze "Renewo" for the higher pressure and temperature lines, and the Iron Body "Ferrenowo" for the lower, form a combination which offers manifold advantages and warrant standardization throughout any plant.

In both Valves the seating surfaces are



The Grate S

—The Foundation of Comb

NO STOKER is better than its grate. The self-cleaning grate surface of the Harrington Stoker is the foundation of this stoker's combustion. Study this grate surface and you are far off in wondering why Harrington Stokers are being installed all over the country.

The non-sifting feature makes it possible to burn lignite, bituminous, anthracite, coke breeze. You know what that means in fuel economy. It's a real advantage. The grate clips can be replaced without stopping the stoker. The self-cleaning feature of the grate keeps it continuously effective. The non-sifting, sifting-free grate of the Harrington marks a real advance in grate design.

For complete information about these and other Harrington stokers, ask for this stoker and a list of notable installations. Complete catalogue.

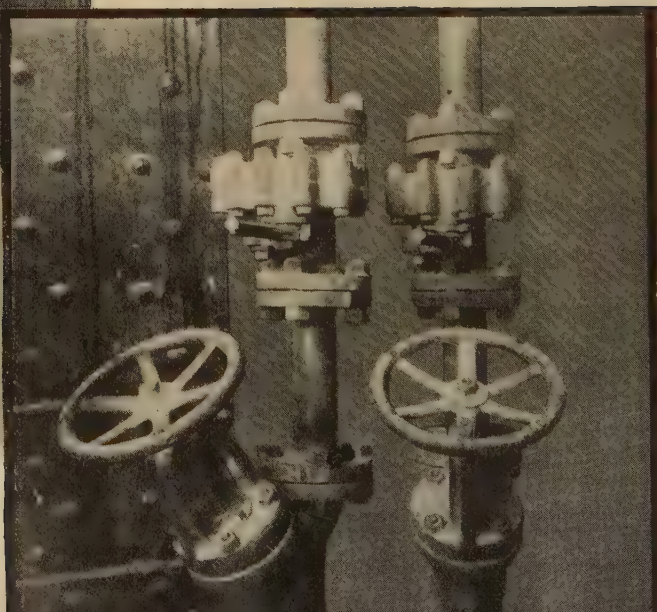


This Book Free

Why and how you should burn coal. Published by the Stoker Manufacturers Ass'n, of which this organization is a part. We'll gladly mail you a copy. Ask for "Coal—the basic fuel."



TANDEM BLOW-OFF VALVES



Operating Under 300 psi in the Devon Plant

AS a result of its highly successful experience with 82 Yarway Blow-Off Valves during the last seven years, the Connecticut Light & Power Company has equipped its new \$4,000,000 plant at Devon with 24 sets of Yarway Tandem Blow-Off Valves.

Each of the twelve big Springfield boilers at Devon is fitted with two sets of Yarway Tandems — carrying the usual Yarway unconditional guarantee of at least two years' trouble-free service.

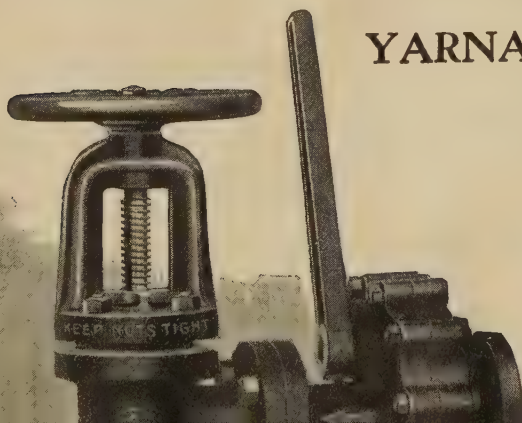
The United Co., associated with the Connecticut Light & Power Co., is also a long-time user of Yarway Blow-Off Valves. It has installed its first set of Yarway Blow-Off Valves at its plant in New Haven, Conn., about a year ago, with many other installations since. There's just one reason for this: Yarway Blow-Off Valves stand up to the toughest service, longer and at a lower cost. If you are looking for guaranteed Blow-Off Valve economies,

Send for Booklet

YARNALL-WARING

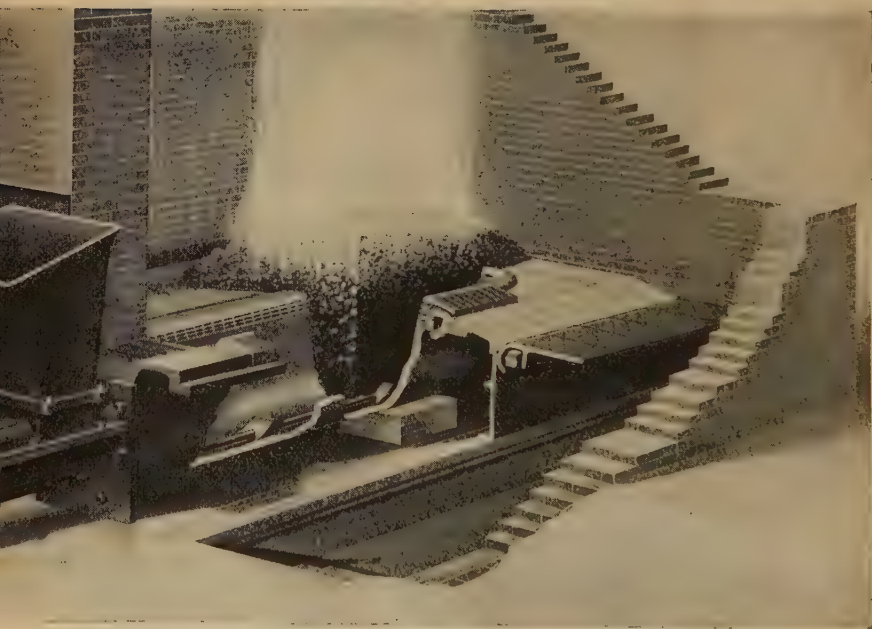
Mermaid Avenue

PHILADELPHIA



THE YARNALL-WARING
combination of

SMALLER



"pump" Stoker showing cylinder, hopper, retort, tuyeres and side dump arrangement

Easy to Install

Easy to Operate

Easy to Clean

BOILER UP

The JONI Standard Side-Dump

Is extremely simple both in design and operation. accessible. No damage to the stoker is possible in the coal.

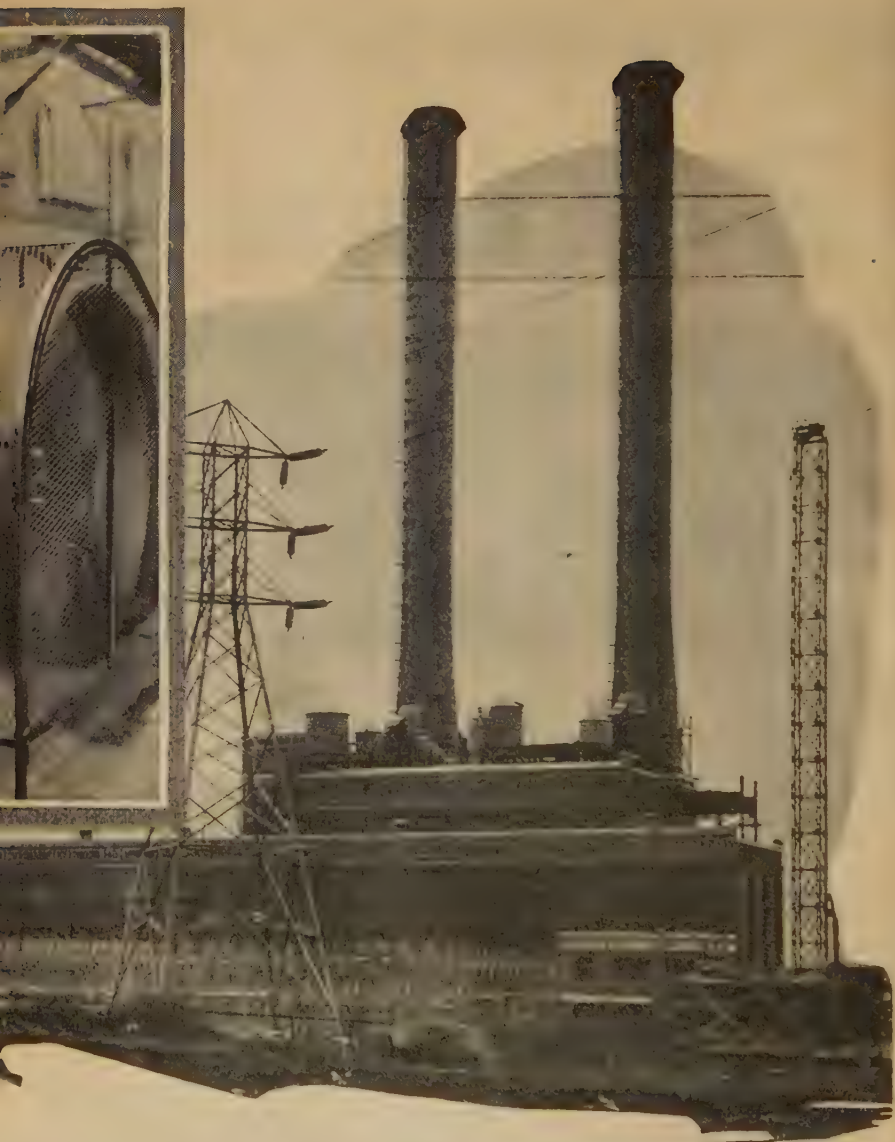
Is easily cleaned. Ash and clinker is deposited on side it is dropped with little effort into ash pit below.

Is adaptable to any boiler setting. This stoker can any type of boiler, new or old. A profitable in plants as well as larger ones.

High efficiency is obtained because fuel and air supply controlled and proportioned for complete combustion.

Smokelessness is assured. By underfeeding the coal,

Is easy to install as no basement is required and only are needed for ash pits.



sed Air for Devon

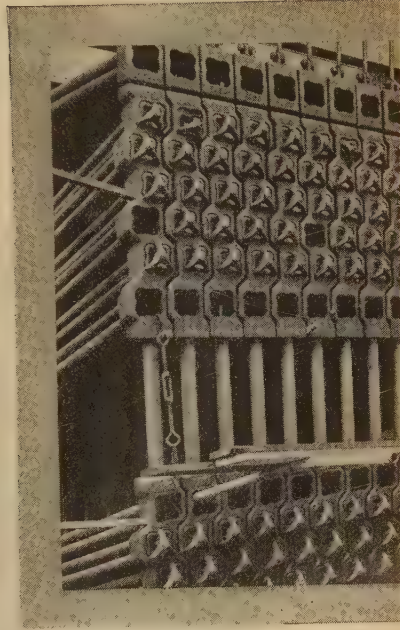
A single-stage Bury air compressor operating at 125 lbs. pressure will furnish air at the New Devon Plant of the Connecticut Light & Power Company.

Maximum economy is obtained by the Bury automatic control and

April 1, 1924

Buying—POWER—Section

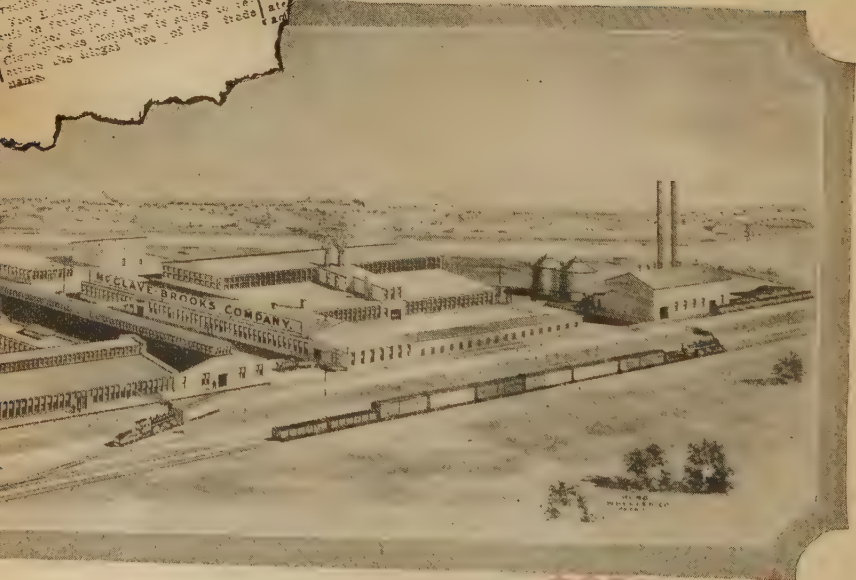
SPRINGFIELD



There

Win
Decision
Use of Its
Mass.
adjudged and de-
name of McClave or Mc-
name of the plain-
McClave-Brooks com-
grates, blowers, me-
and combustion sys-
been long used by it
plaintiff has a property
as between the parties
entitled to be protected
of said name, servants and
its agents, and each of
be and they and each of
by are, perpetually en-
restrained from using, in
or printed matter what-
the word McClave or Mc-
the alone or in combina-
either other names, to designate
its grates, blowers, mechanical
or combustion systems."
by Binghamton T...
... proceedings by Attorney
... of Binghamton T...
... of the B... members of
... County of Albany and
... placed against Albany and
... one of the leading law firms
... of the State of New York
... General for Governor re-
... was defeated in 1912 by re-
... the B... in a number
... in favor of the B... the al-
... of the B... is going to re-
... the B... use of the trade
... name

2355



2355

In the field of power combustion, the name McClave has always stood for *completeness of service.*

McClave complete engineering systems are known, and used from Coast to Coast; from Canada to Mexico—in every state in the Union.

Boston, has
trade name,
use it either
nes, to desig-
l. stokers

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